

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A method for isolation of a target comprising the steps of:
dispersing one or more probe beads in a thixotropic agent;
scanning for probe beads that generate a detectable signal from interaction between the one or more probe beads and the target; and
picking one or more probe beads based on the detectable signal.
2. (Original) The method of claim 1, further comprising the step of extracting the target from the probe bead.
3. (Original) The method of claim 1, further comprising the step of identifying the target by mass spectrometry after liquid chromatography.
4. (Original) The method of claim 1, further comprising the step of identifying the target using mass spectrometry comprises matrix assisted laser desorption ionization mass spectrometry.
5. (Withdrawn) The method of claim 1, wherein the probe beads comprise an S-ODN library.
6. (Original) The method of claim 1, wherein the probe beads comprise an S₂-ODN library.
7. (Original) The method of claim 1, wherein each of the probe beads are further modified to comprise a colorimetric agent.
8. (Original) The method of claim 1, wherein each of the probe beads further comprise one or more bases that are attached to a fluorophor.
9. (Original) The method of claim 1, wherein each of the probe beads further comprises one or more fluorophors attached to the 5' end, the 3' end or internally within the aptamers.
10. (Previously amended) The method of claim 1, wherein a probe on the probe bead comprises a peptide.
11. (Original) The method of claim 1, wherein the probe beads comprise an aptamer

and the aptamer is defined further as comprising a thioaptamer.

12. (Previously amended) The method of claim 1, wherein the probe beads comprise an aptamer are defined further as comprising a thioaptamer and wherein one or more but less than all of the linkages comprising one or more of the following: rATP(α S₂), rUTP(α S₂), rGTP(α S₂), rCTP(α S₂), rATP(α S), dTTP(α S), dGTP(α S), dCTP(α S), dATP(α S₂), dTTP(α S₂), dGTP(α S₂) and dCTP(α S₂).

13. (Currently amended) The method of claim 1, wherein the target is labeled with an a fluorescent agent.

14. (Previously amended) The method of claim 1, wherein the target is a fluorescent agent.

15. (Original) The method of claim 1, wherein the probe bead is further processed to remove the target bound to the aptamer bead.

16. (Original) The method of claim 1, wherein the probe bead is acquired by a scanning robotic head and the target is extracted from the probe bead in situ.

17. (Original) The method of claim 1, probe bead is acquired by a scanning robotic head and the target is extracted from the probe bead in situ by proteolysis and transferred to the inlet of an LC-MS or an LC-MS/MS.

18. (Previously amended) The method of claim 1, wherein the probe bead is acquired by a scanning robotic head and the target is extracted from the probe bead in situ for MALDI-MS analysis, wherein the MALDI-MS analysis is MALDI-TOF/MS.

19. (Original) The method of claim 1, wherein the probe bead is acquired by a scanning robotic head and the target is extracted from the probe bead in situ for LC-MS analysis.

20. (Original) The method of claim 1, wherein the probe bead is acquired by a scanning robotic head and the target is extracted from the probe bead in situ for MALDI-MS analysis.

21. (Original) The method of claim 1, wherein the probe bead is acquired by a scanning robotic head and the target is extracted from the probe bead in situ for MALDI-MS analysis by SELDI ionization.

22. (Previously amended) The method of claim 1, wherein the probe bead is further

processed to remove the target bound to the aptamer bead and analyzing the target by MALDI-TOF.

23. (Original) The method of claim 22, wherein the MALDI ionization step is a SELDI ionization.
24. (Original) The method of claim 1, wherein the probe bead is further processed to remove the target bound to the aptamer bead and analyzing the target by binding a second detectable label to the target.
25. (Previously amended) The method of claim 1, wherein the thixotropic agent comprises a polyacrylamide gel.
26. (Previously amended) The method of claim 1, wherein picking the one or more probes beads is semi-manually.
27. (Previously amended) The method of claim 1, wherein the target is proteins,.
28. (Original) The method of claim 1, wherein the one or more probe beads are dispersed within the thixotropic agent by molecular printing.
29. (Previously amended) The method of claim 1, wherein the one or more probe beads are dispersed within the thixotropic agent using an ink-jet printer.

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